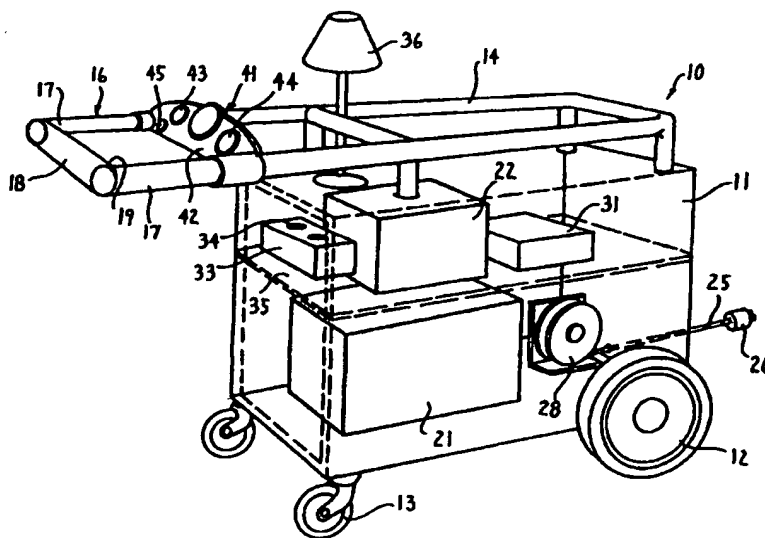




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : H02K	A2	(11) International Publication Number: WO 97/49161 (43) International Publication Date: 24 December 1997 (24.12.97)
(21) International Application Number: PCT/US97/10568 (22) International Filing Date: 5 June 1997 (05.06.97) (30) Priority Data: 60/019,654 7 June 1996 (07.06.96) US (71) Applicant (for all designated States except US): HAWORTH, INC. [US/US]; One Haworth Center, 1400 Highway M-40, Holland, MI 49423 (US). (72) Inventor; and (75) Inventor/Applicant (for US only): WEST, Daniel, C., K. [US/US]; 20 E. 32nd Street, Holland, MI 49423 (US). (74) Agents: THIEL, Dale, H. et al.; Flynn, Thiel, Boutell & Tanis, P.C., 2026 Rambling Road, Kalamazoo, MI 49008-1699 (US).		(81) Designated States: CA, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published Without international search report and to be republished upon receipt of that report.

(54) Title: PORTABLE POWER PEDESTAL



(57) Abstract

A mobile power pedestal, particularly for support and electrical powering of a laptop or portable computer, comprising a wheeled housing having a handle adapted for engagement by an operator. The housing mounts thereon an upwardly-facing support tray adapted to permit the computer to be disposed thereon. A battery is mounted on the housing. A charger is mounted on the housing and connected to the battery. A power cable is connectable to the charger and has an outer plug end adapted for connection to a conventional electrical outlet for supply of 115-volt AC electrical electricity. A power strip is provided on the housing and defines thereon at least one conventional 115-volt AC electrical outlet for accommodating a conventional prong-type electrical plug, and a DC/AC inverter is connected between the battery and the power strip, whereby a power cord associated with the computer as mounted on the support tray can be plugged into the outlet.

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PORTABLE POWER PEDESTAL

FIELD OF THE INVENTION

This invention relates to a portable and mobile
5 power pedestal which is particularly adapted for use with
a portable computer so as to permit the computer to be
supported thereon and supplied with conventional AC
electrical energy to permit the computer to be used for
long periods of time and readily moved about, without
10 requiring direct connection to a conventional AC
electrical current outlet.

BACKGROUND OF THE INVENTION

Portable computers, commonly referred to as laptops,
are extensively utilized and provide highly advantageous
15 functional characteristics since the computer can be
utilized to perform a wide range of functions without
requiring that the computer be connected to a
conventional AC electrical outlet. This thus provides
the computer with a great degree of flexibility,
20 particularly with respect to mobility of the computer
when in use. For this purpose, the laptop typically is
provided with its own battery pack, but as is well known,
such battery pack is typically only usable for about one
hour prior to requiring recharging. This thus severely
25 limits the ability of the laptop to be used in a highly
mobile or flexible manner for long periods of time
without requiring either a large number of rechargeable
batteries or periodic access to a standard 110-volt AC
electrical outlet.

30 The present invention relates to a mobile and
portable power pedestal which is particularly adapted to
be used in conjunction with and support a laptop computer
thereon, which power pedestal enables the laptop computer
to be readily moved about over a significant area or
35 location and at the same time permits the laptop computer
to be utilized for long periods of time without requiring

connection to a standard 110-volt AC electrical outlet and without requiring use of or discharge of the standard computer battery pack. The power pedestal of this invention provides its own large-capacity 12-volt battery which is connected to a charging structure which is also mounted on the power pedestal, the latter having a power supply cord which, during periods of non-use, can be plugged into a standard electrical outlet to permit charging of the 12-volt battery. The battery in turn connects to a DC/AC converter which in turn connects to a power strip mounted on the pedestal, the latter defining thereon conventional 110-volt AC electrical outlets. The power pedestal also provides a support tray on which the laptop can be positioned, and the power supply of the laptop can be plugged into one the outlets of the power strip to permit the laptop to be powered by standard 110-volt alternating-current electricity, even though the power pedestal may be remote from and wholly disconnected from any standard 110-volt electrical supply outlet. The power pedestal includes a housing provided with wheels, and preferably a handle arrangement, to enable the power pedestal to be readily rollingly moved to remote locations, and in fact moved from location to location while still enabling powering of and hence use of the laptop for long periods of time prior to requiring recharging of the power pedestal battery.

The power pedestal of this invention, as summarized above, will be particularly adaptable for use in factories and warehouses where use of a laptop may be required for extended periods of time, but where connection to a standard 110-volt AC electrical outlet as associated with the building structure may not be readily or conveniently available. This power pedestal will also find application for use in office and other commercial-type environments, particularly where there is a need to provide powering and use of a laptop for several hours or

several working days, but where standard building-provided electrical outlets are not conveniently available.

5 Other objects and purposes of the invention will be apparent upon reading the following specification and inspecting the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

10 Figure 1 is a diagrammatic perspective view of a mobile power pedestal according to the present invention, which pedestal has been illustrated solely in outline form to permit illustration of the structure which is typically enclosed within the housing of the pedestal.

15 Figure 2 is a block diagram which illustrates the basic components of the power pedestal of Figure 1, and which also illustrates the electrical connections therebetween and the manner in which the power pedestal electrically connects to both a laptop and selectively to an external building-type power supply, namely a standard electrical outlet.

20 Figure 3 is a side elevational view of a second and preferred embodiment of the power pedestal according to the invention.

25 Figures 4 and 5 respectively represent left and right end elevational views of the power pedestal shown in Figure 3.

Figure 6 is a top view of the power pedestal shown in Figure 3.

30 Certain terminology will be used in the following description for convenience in reference only, and will not be limiting. For example, the words "upwardly", "downwardly", "rightwardly" and "leftwardly" will refer to directions in the drawings to which reference is made. The words "inwardly" and "outwardly" will refer to directions toward and away from, respectively, the
35 geometric center of the pedestal and designated parts thereof. Said terminology will include the words

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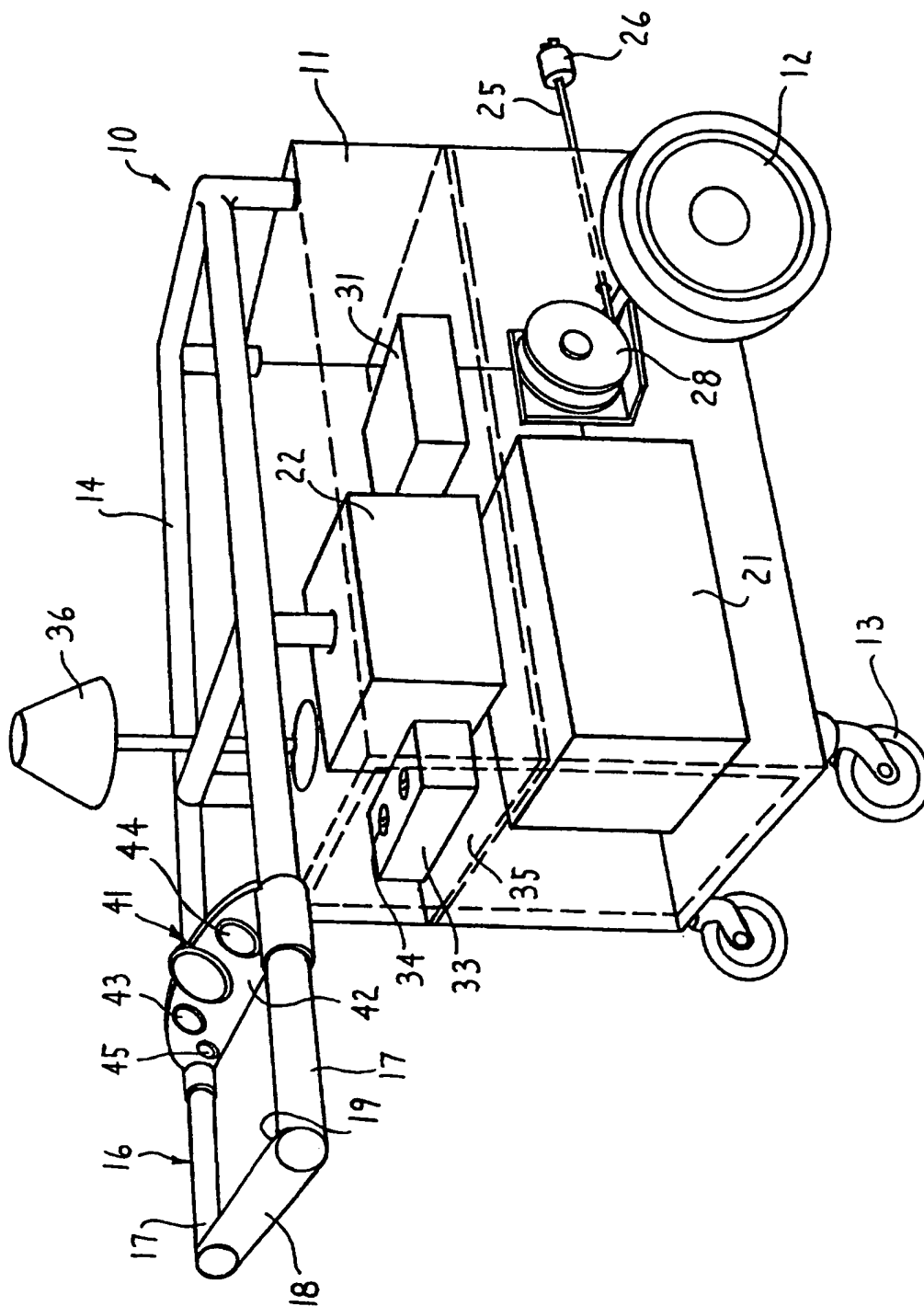
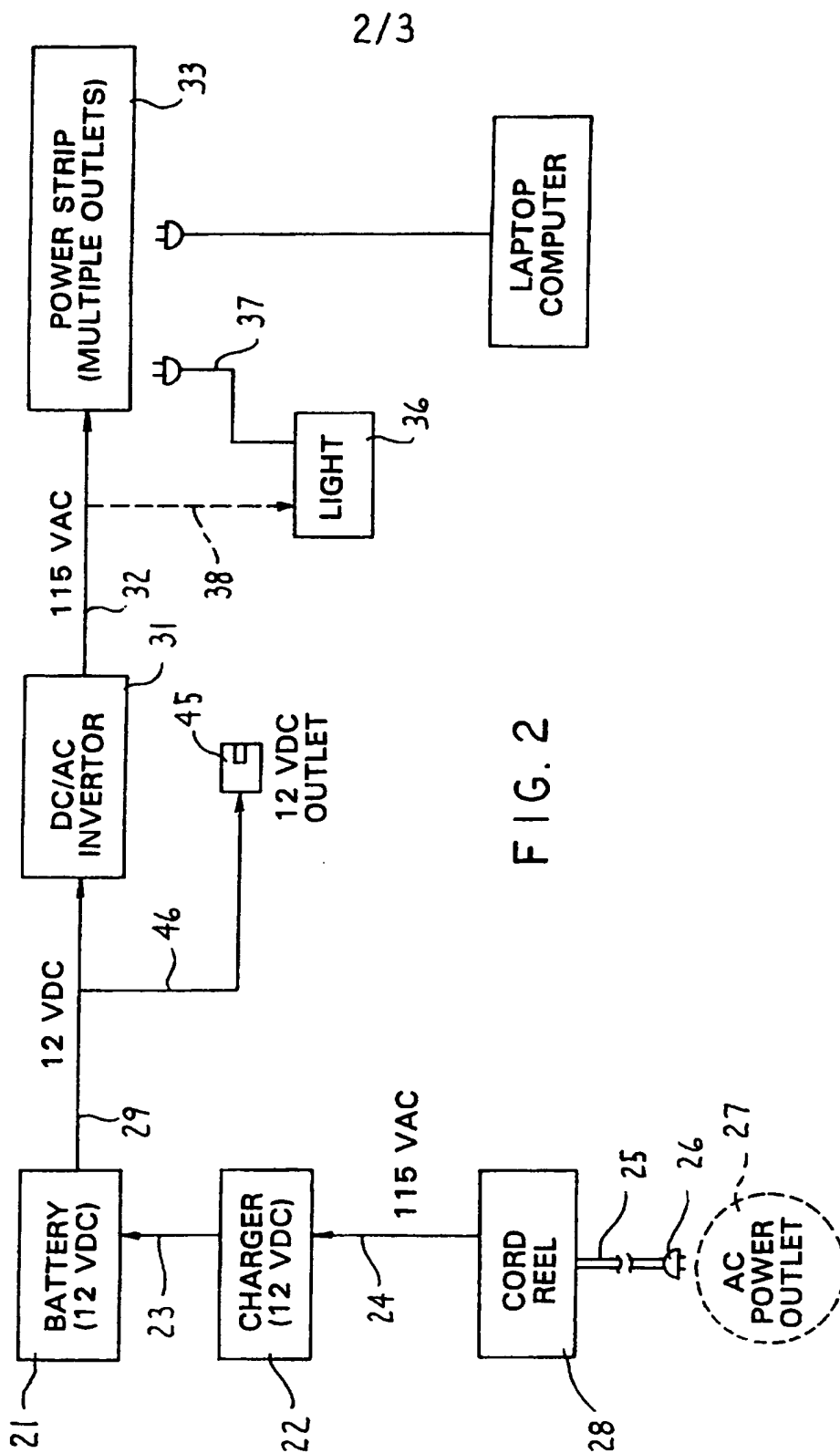
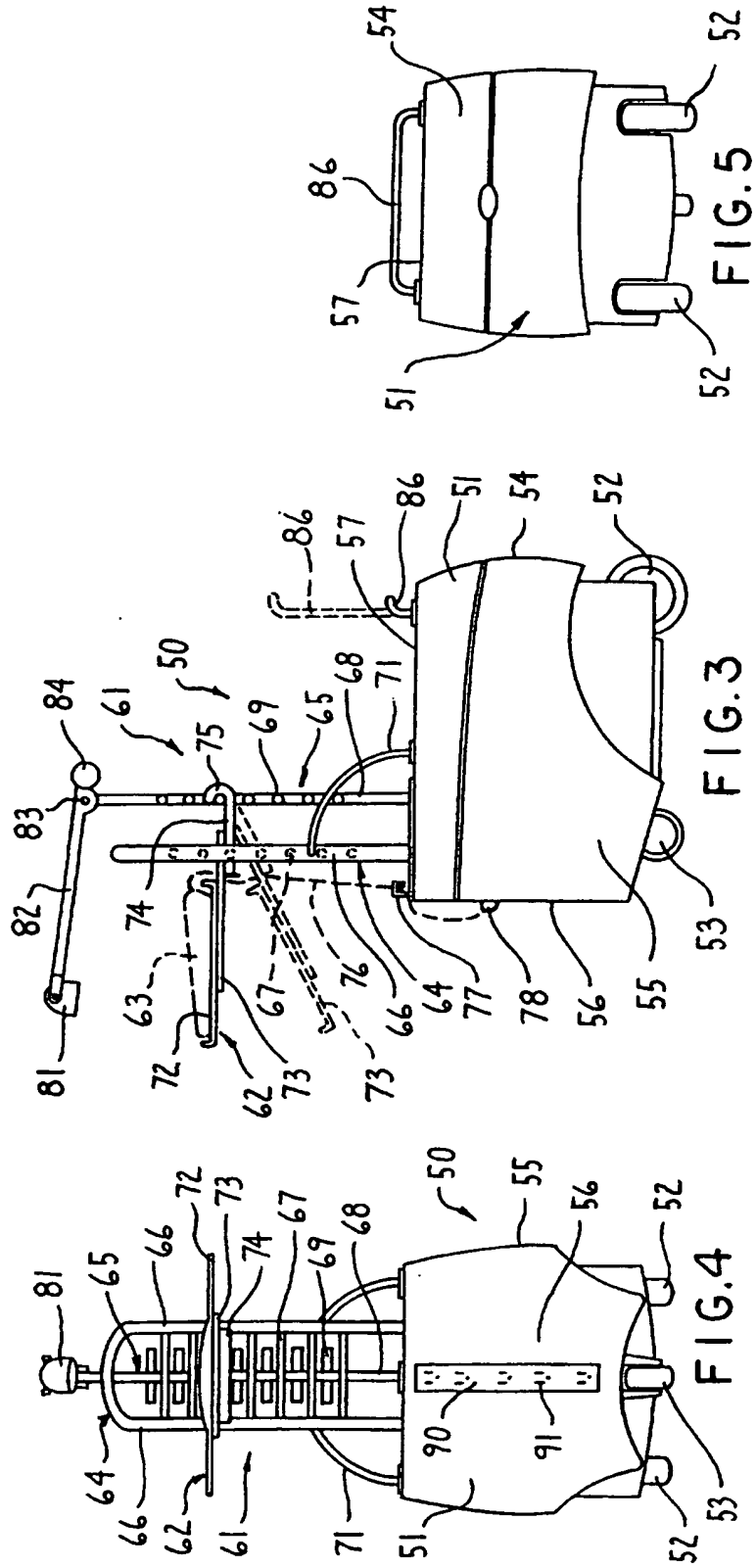
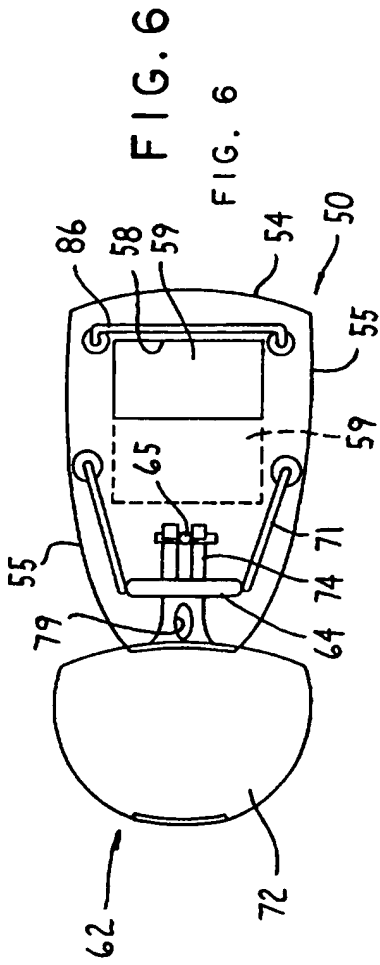


FIG. 1





specifically mentioned, derivatives thereof, and words of similar import.

DETAILED DESCRIPTION

Referring to the drawings, Figure 1 illustrates
5 therein a mobile and portable power pedestal 10 according to the present invention. The power pedestal 10 includes a generally enclosed housing 11 defining therein an accessible interior compartment for storage of the components described hereinafter. The housing 11 is
10 provided with a pair of front wheels 12 and a pair of rear casters 13 for rolling but steerable support of the power pedestal on a floor.

In the illustrated arrangement the housing has a top rail structure 14 fixed thereto, the latter defining a
15 generally U-shaped handle 16 which is generally horizontally oriented and which projects in overhanging relationship rearwardly and outwardly away from the rear upper part of the housing. This handle includes a pair of generally sidewardly spaced side rails 17 which at
20 their rearward ends are fixedly joined to a horizontally and transversely extending handle 18.

The power pedestal 10 also mounts thereon a horizontally enlarged and upwardly facing support tray 19 adapted to permit support of a laptop computer thereon.
25 The support tray 19 is preferably positioned at an elevation and location so as to be readily accessible, and for this purpose is preferably provided in conjunction with the handle 16. In the illustrated and preferred embodiment, the tray 19 is provided forwardly
30 of the handle 18 and extends transversely between and is rigidly supported on the side rails 17. This thus positions the tray 19 and the laptop thereon directly adjacent the handle 18 so that the computer is readily accessible to an operator, which operator can also
35 readily grip the handle 18 so as to propel the pedestal as desired. The handle 18 and tray 19 are thus disposed

at an elevation for convenience use by an operator standing on the floor directly adjacent the handle 18.

The power pedestal 10 mounts, interiorly of the housing 11, a high capacity battery 21, specifically a 12-volt DC battery similar to a heavy-duty vehicle or industrial battery. This battery 21 in turn is connected to a conventional battery charger 22 through a suitable electrical conductor or cable 23. The battery charger 22, like the battery 21, is a conventional item and is also positioned interiorly of the housing 11. The battery charger 22 is connected through a suitable electrical conductor or cable 24 to a conventional elongate flexible power cord 25 having a standard electrical plug 26 on the outer free end thereof. This power cord 25 is preferably adapted to be stored on a conventional cord reel 28 which is mounted interiorly of the housing, with the power cord 25 projecting outwardly through a suitable access opening in the side wall of the housing so that, when charging of battery 21 is desired, the power cord 25 can be unreeled and the plug 26 thereof engaged with a conventional external power supply 27, such as a conventional building outlet or receptacle which is supplied with 115-volt AC electrical power.

The battery 21 has the output side thereof connected through an electrical conductor or cable 29 to a DC/AC inverter 31 which is also disposed interiorly of the housing 11, which inverter 31 converts the 12-volt DC from the battery 21 to 115-volt AC. The 115-volt AC output from inverter 31 is then supplied through a suitable electrical cable or conductor 32 to a power strip 33, the latter defining on a side wall thereof at least one, and preferably two or more, conventional electrical outlets 34 such as conventional three-hole receptacles for accommodating conventional two or three prong electrical plugs.

The power strip 33 is preferably disposed so as to be readily accessible, particularly accessible with respect to the support tray 19, and for this purpose the power strip 33 is preferably disposed adjacent the rear of the housing at an elevation spaced upwardly a substantial distance above the floor so as to be conveniently accessible to the operator. In the illustrated embodiment the upper rear portion of the housing is provided with a rearwardly opening compartment defined by a bottom shelf 35, and the power strip 34 is preferably fixedly positioned on this shelf to thus provide convenient access to the outlets 34 when a laptop computer is to be plugged therein.

The power pedestal in the illustrated embodiment is also preferably provided with a light 36 which is mounted thereon and projects upwardly from the upper surface thereof, which light is preferably disposed in close proximity to the support tray 19 to provide illumination for the laptop computer. The light may be provided with its own conventional on-off switch, and the light is electrically connected to a suitable electrical conductor or cable 37 which may be provided with a plug at the end for engagement within one of the outlets 34 associated with the power strip 33. Alternatively, the light 36 can be directly wired to the 115-volt AC outlet from the convertor 31, as indicated at 38 in Figure 2.

The power pedestal 10 is also preferably provided with a gauge arrangement 41 mounted thereon, the latter preferably being provided in the vicinity of the handle or the rear upper portion of the housing so as to be readily visible to the operator. The gauge arrangement 41 in the illustrated embodiment includes a support wall 42 which is fixed to and extends transversely between the handle side rails 17 directly rearwardly of the support tray 19. This support wall 42 mounts thereon a conventional DC voltmeter 43 which connects to the

battery 21 so as to provide a continuous visual indication of the existing electrical charge of the battery. The gauge display 41 may also include a clock 44 so that the operator may readily keep track of time and hence usage of the power pedestal. Any additional desired gauges may also be mounted on the support wall 42. This support wall 42 may also be provided with a conventional 12-volt DC outlet or jack 45 for accommodating therein a conventional 12-volt DC plug. This outlet 45 in turn is connected through a suitable cable or electrical conductor 46 to the output side of the battery 21.

The power pedestal 10, when not in use, will typically be stored in an area which is located closely adjacent a conventional 115-volt AC power outlet 27, and the plug 26 of the flexible power supply cable 25 will be engaged with the outlet 27 so as to supply conventional 115-volt AC current to the charger 22 to thereby effect charging of the battery 21.

When use of the mobile power pedestal 10 is desired, the power cable 25 will be unplugged and restored on the reel 28. The operator can then move the power pedestal 10 about due to its support on the wheels 11 and casters 12 by effecting pushing and steering of the power pedestal through the handle 18. The operator can position the laptop computer 51 directly on the support tray 19, and the power cable 52 for the laptop can then be plugged into one of the outlets 34 of the power strip 33. In this fashion the laptop can be operated from a source of 115-volt AC electrical energy, the latter being supplied to the power strip from the battery 21 through the intervening inverter 31. Because of the significant capacity of the battery 21, the laptop can be operated in association with the power pedestal 10 for long periods of time without requiring any direct connection to a

standard power outlet 27, or without requiring continual recharging of the typical laptop battery pack.

The housing 11 associated with the power pedestal as shown in Figure 1 has been diagrammatically depicted generally as a boxlike housing solely for purposes of illustration. It will be appreciated, however, that the housing will normally be provided with a more streamline appearance so as to provide improved appearance and elimination of sharp corners and the like.

Reference will now be made to Figures 3-6 wherein there is illustrated a power pedestal 50 according to a second and preferred embodiment of the invention. It will be appreciated that the power pedestal 50 will incorporate therein the same basic components diagrammatically illustrated in Figure 2, and further detailed description of these components will not be presented. The following description will relate primarily to the different structural and functional relationships possessed by the power pedestal 50.

The power pedestal 50 includes a housing 51 which is generally hollow and has a pair of wheels 52 adjacent one end thereof, and a caster 53 adjacent the other end thereof for rolling engagement with the floor. The housing includes a generally rounded end wall 55 adjacent one end thereof, a further rounded end wall 56 adjacent the other end thereof, and a pair of rounded sidewalls 55 which merge into the end wall 56. This sidewall construction is secured to a generally flat top wall 57 which, as illustrated by Figure 6, has an opening 58 therethrough for accessing the hollow interior of the housing to access the components therein. This opening 58 is provided with a movable cover 59 which can be slidably supported on tracks which enable it to be slidably displaced horizontally under the top wall, into an open position such as indicated by dotted lines in Figure 6.

The power pedestal 50 is again provided with an externally accessible power strip associated therewith, which power strip is indicated at 90 in Figure 4 and is effectively integrated into and extends vertically along the center of the rounded end wall 56. The strip 90 has a plurality of conventional three-hole electrical receptacles or outlets 91 associated therewith for supplying 115 volt AC electrical current.

The housing 51, adjacent the end wall 56, has an upwardly projecting support structure 61 for releasably but stationarily mounting thereon a laptop tray or support arrangement 62. This support structure 61 in the illustrated embodiment includes first and second upright columns 64 and 65 which are fixed to the upper wall 57 and project generally vertically upwardly therefrom in substantially cantilevered relation. These upright columns 64 and 65 are disposed adjacent the end wall 56 but are slightly spaced apart from one another in the longitudinal direction of the pedestal.

The column 64 includes a pair of generally vertically parallel upright support rods or rails 66 which are sidewardly spaced a small distance apart, and are rigidly joined together by a plurality of steps or cross rails 67 which extend horizontally between the upright rails 66. The cross rails 67 are positioned in generally uniformly vertically spaced relation. The other upright column 65 includes a single support rod 68 which projects vertically upwardly, and the latter is provided with a plurality of generally horizontal support rods or elements 69 projecting perpendicularly and horizontally therefrom. These rods 69 project outwardly from opposite sides of the rod 68 so as to extend in generally parallel relationship with the cross rails 67. The rods 69 are uniformly vertically spaced apart at generally the same vertical spacing as provided between the cross rails 67. Suitable braces 71 may be provided

and interconnected between the top wall 57 and the upright rails 66.

5 The upright support columns 64 and 65 are provided for releasably supporting the laptop tray arrangement 62 thereon at a selected one of a plurality of vertically spaced locations. The laptop support arrangement 62 includes a generally horizontally enlarged and upwardly opening tray 72 which is adapted to support a laptop computer 63 on the upper surface thereof. This tray 72 is disposed so as to project generally longitudinally away from the upright column 64 in cantilevered relationship, and for this purpose the tray 72 is mounted on a suitable support arm or frame 73, the latter having a bracket 74 fixed thereto for supportive but releasable engagement with the upright columns 64 and 65. More specifically, this bracket 74 has a support part which opens downwardly so as to be positioned in supportive engagement with a selected one of the cross rails 67, and the bracket 74 projects longitudinally inwardly past the column 64 and is provided with a bifurcated nose part 75 which projects under and hooks upwardly at least partially around one of the transverse rods 69 to stationarily and securely but removably support the laptop support assembly 62 on the upright support structure 61. This latter structure thus provides several vertically spaced positions so that the operator can select the desired elevation for the laptop. Alternatively, the support tray arrangement 62 can also be disposed in an angled relationship by engagement with a cooperating pair of rods 67 and 69 which are more vertically spaced so as to provide the desired angled relationship, the latter being diagrammatically indicated by dotted lines in Figure 3.

30 The upright support structure 61 can also be provided for supporting a light thereon, and in the illustrated embodiment there is provided a light 81 which

can be adjustably positioned generally over the laptop. The light 81 is mounted on the outer end of an elongate support arm or rod 82, the latter being connected by a horizontal hinge axis 83 to the upper end of the support rod 68. The arm 82 can be provided with a counterweight 84 or a spring holding structure to permit vertical adjustment of the light 81 while permitting the light to be maintained in the desired selected elevation. The electrical cable (not shown) for the light 81 can be suitably extended downwardly through the interior of rods 82 and 68, or exteriorly therealong if desired, for extension into the interior of the pedestal housing for connection as illustrated in Figure 2.

The power pedestal 50 is also preferably provided with a manually-grippable handle 86 which, in the illustrated embodiment, is disposed adjacent the end of the housing opposite from the tray 62. This handle can be of a generally downwardly-configured U-shaped arrangement having a horizontally elongated top cross rod extending transversely of the housing, with the cross rod being joined to a pair of side legs which project down and engage the housing. These side legs can be slidably telescoped downwardly into the housing so that the handle can be stored in a collapsed position as illustrated in Figure 3, which the handle being slidable upwardly into a raised position if desired to facilitate gripping of the handle and propelling of the cart.

It will be appreciated that the keyboard support tray 62 itself can also be utilized as a handle since the mounting thereof on the upright column 61 is sufficiently secure as to permit an operator to apply a pushing force against the outer edge of the support tray structure to effect propelling of the cart.

When a laptop 63 is positioned on the tray 72, the electrical cable 76 of the laptop will be fed downwardly, such as through an opening 79 formed in the support

bracket structure and thence preferably looped through a suitable hook 77 provided on the top wall so as to provide control over the position of the electrical cable 76. The cable can then be fed downwardly adjacent the curved end wall 56 so that the plug 78 can be engaged with one of the receptacles or outlets 91.

The structure and function of the pedestal unit 50, other than the differences described above, otherwise corresponds to the arrangement described above with respect to Figures 1 and 2.

The power pedestal 10 of this invention is thus particularly desirable for use in office and other commercial environments for providing highly mobile and highly flexible and long-term usage of a portable or laptop computer without requiring that the computer be directly electrically connected by power cables to a standard building outlet.

Although a particular preferred embodiment of the invention has been disclosed in detail for illustrative purposes, it will be recognized that variations or modifications of the disclosed apparatus, including the rearrangement of parts, lie within the scope of the present invention.

I/we claim:

1. A mobile power pedestal, particularly for support and electrical powering of a laptop or portable
5 computer, comprising a wheeled housing having a handle adapted for engagement by an operator, the housing mounting thereon an upwardly-facing support tray adapted to permit the computer to be disposed thereon, a battery mounted on the housing, a charger mounted on the housing
10 and connected to the battery, a power cable connectable to the charger and having an outer plug end adapted for connection to a conventional electrical outlet for supply of 115-volt AC electrical electricity, a power strip provided on said housing and defining thereon at least
15 one conventional 115-volt AC electrical outlet for accommodating a conventional prong-type electrical plug, and a DC/AC inverter connected between said battery and said power strip, whereby a power cord associated with the computer mounted on the support tray can be plugged
20 into the outlet.